

Technical data sheet

Universal audio signal encoder



Identification

Type	AST-6016.00 DC 24-110V
Part No.	826016.00

Product version

Hardware revision	D
Software version	4.20
Datasheet version	15

Use/Application/Properties

Description	Freely-programmable audio signal encoder for rail applications to play MP3 and WAV files. The audio signal encoder has a status output for signalling the operation (max. 50 mA).
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Technical data

Nominal voltage range	DC 14.4 V – 154 V
Rated voltage U_N	DC 24–110 V
Rated current (at U_N)	max. 300 mA @ 24 V / max. 65 mA @ 110 V
Frequency bandwidth	350 Hz – 5800 Hz
Sound pressure level	104 dB @ 2 kHz at 1 m
Volume control	Configurable or infinitely adjustable via potentiometer
Technology	Broadband loudspeaker
Boot-up time	< 200 ms
Storage temperature range	-40 °C ... +80 °C

Inputs

Number	Max. 6, binary-encodable, thus max. 63 messages
Current Consumption	Depending on configuration 0,2 mA @ 24 V / 0,8 mA @ 110 V without input load 1.8 mA @ 24 V/2.4 mA @ 110 V with input load
Debounce time	Configurable
Switching Threshold	Configurable

Lütze Transportation GmbH

Postfach 12 24 (PLZ 71366) • Bruckwiesenstraße 17-19 • D-71384 Weinstadt
Tel. +49 (0)7151 6053-545
www.luetze-transportation.com • sales.transportation@luetze.de

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Connection type input	X1: Push-In Each 1×10-pin 0.20 mm ² – 2.5 mm ² AWG 24 – AWG 12 Strip length: 10 mm Screwdriver: 3.5 × 0.6 mm
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Status output

Signalisation	"Device is working correct" max. 50 mA
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General

Dimensions (w × h × d)	92.0 mm × 92.0 mm × 64.0 mm
Weight/unit	0.578 kg
Connection type	PE connection X0: Bolt M6 × 18.5
Mounting	DIN rail mounting
Status indication	LED green

Environmental service conditions

Altitude	2000 m
Operating temperature class	OT4: -40 °C ... +70 °C
Switch-on extended Operating temperature class	ST1: OTx + 15 °C
Temperature variation class	H1: no requirements
Shock/Vibration	Category 1, class B
Class of supply voltage interruption	S2: 10 ms
Supply change-over class	C1: 100 ms
Useful life class	L4: 20 years
Degree of pollution	PD2
Over voltage category	OV2
Socket and edge connector	K2: Sockets for ICs and/or edge connectors are not used
Protective coating class	PC2: lacquered on both sides
Degree of protection	IP20

Failure Rate Prediction (MTBF)

Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500
Failure rate at +45 °C	1237 fit
Failure rate at +45 °C	808609 h 1 fit equals one failure per 10 ⁹ component hours The indicated temperature is the mean component ambient temperature.
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances. Continuous operation 8760 h per year.

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Standards/Certifications

Standards

EN 50155:2007: Railway applications – Rolling stock – Electronic equipment
EN 50155:2021: Railway applications – Rolling stock – Electronic equipment
– only testing according to chapter 13.3
Withstand voltage test: routine test with 1 s test duration
EN 50121-3-2:2016+A1:2019: Railway applications – Electromagnetic
compatibility – Part 3-2: Rolling stock – Apparatus
EN 50124-1:2017: Railway applications – Insulation coordination – Part 1:
Basic requirements – Clearances and creepage distances for all electrical
and electronic equipment
EN 61373/AC:2017: Railway applications – Rolling stock equipment – Shock
and vibration tests
EN 61373:1999: Railway applications – Rolling stock equipment – Shock and
vibration tests
EN 61373:2010: Railway applications – Rolling stock equipment – Shock and
vibration tests
Regulation No. EMC 06: Technical Rules on Electromagnetic Compatibility -
Verification of radio compatibility of rail vehicles with railroad radio services
EN 45545-2:2020: Railway applications – Fire protection on railway vehicles
– Part 2: Requirements for fire behaviour of materials and components

Equipment/Spare parts

Accessories

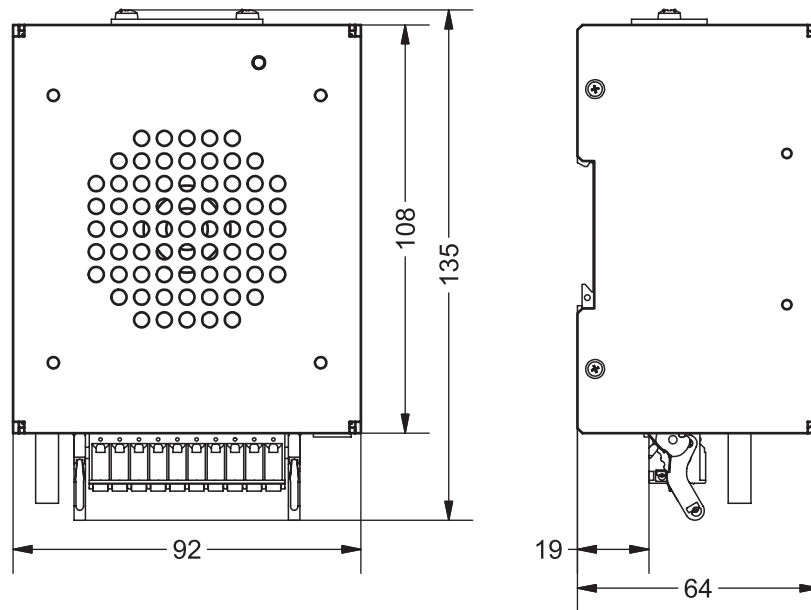
Programmer part number 826900
"AudioConfig Tool" from version 2.2.0
Software recommendations:
- Audacity – Open source programm, audacity.sourceforge.net
- From Text to Speech – Free online text–speech service,
www.fromtexttospeech.com
In addition, mounting brackets are available for direct rear wall mounting
under part number 826902.

Notes and Comments

Comments

The supply voltage (1/2) and the digital inputs (3-8) must have the same
earth/ground (GND).

Dimensions



Connection assignment

Pin	Function
1	Vdd (24 V – 110 V)
2	Vss (0 V)
3	Input 1 (I1)
4	Input 2 (I2)
5	Input 3 (I3)
6	Input 4 (I4)
7	Input 5 (I5)
8	Input 6 (I6)
9	Status (S)
10	N.C.

Volume

